

REVIEW SET 10A

1 If $p = 5$, $q = -3$, and $r = 6$, evaluate:

a $\frac{r}{q}$

b $\frac{p - q}{p + q}$

c $\frac{\sqrt{p^2 - 16}}{r - q}$

d $\frac{p + 2q - 2r}{r^2 - p^2}$

2 Simplify:

a $\frac{(2t)^2}{6t}$

b $\frac{16a + 8b}{6a + 3b}$

c $\frac{x(x - 4)}{3(x - 4)}$

d $\frac{8}{4x + 8}$

3 Simplify:

a $\frac{2x + 6}{x^2 - 9}$

b $\frac{x^2 + 4x + 4}{x^2 + 2x}$

c $\frac{3x^2 - 6x}{3x^2 - 5x - 2}$

4 Simplify:

a $\frac{2a - 2b}{b - a}$

b $\frac{5x - 15}{3x - x^2}$

c $\frac{16 - x^2}{2x - 8}$

5 Simplify:

a $\frac{a}{b} \times \frac{b}{3}$

b $\frac{a}{b} \div \frac{b}{3}$

c $\frac{a}{b} + \frac{b}{3}$

d $\frac{a}{b} - \frac{b}{3}$

6 Simplify:

a $\frac{7x - 14}{x} \times \frac{3}{x - 2}$

b $\frac{t^2 - 3t}{6t + 6} \times \frac{t + 1}{4t - 12}$

7 Simplify:

a $\frac{9}{n} \div 6$

b $\frac{7}{3x - 6} \div \frac{x + 5}{x^2 - 2x}$

8 Write as a single fraction:

a $\frac{2x}{3} + \frac{x}{4}$

b $2 + \frac{x}{7}$

c $\frac{x}{4} - 1$

d $\frac{x}{2} + \frac{x}{4} - \frac{x}{3}$

9 Simplify:

a $\frac{x}{3} + \frac{x - 1}{4}$

b $\frac{x + 2}{3} - \frac{2 - x}{6}$

c $\frac{2x + 1}{5} - \frac{x - 1}{10}$

10 Simplify:

a $\frac{1}{x + 1} + \frac{2}{x - 2}$

b $\frac{5}{x - 1} - \frac{4}{x + 1}$

c $\frac{1}{x^2} + \frac{1}{x + 1}$

11 Solve for x : $\frac{6}{x} = \frac{5}{11 - x}$

12 **a** Write as a single fraction: **i** $a - \frac{9}{a}$ **ii** $1 - \frac{a}{3}$

b Hence simplify $\left(a - \frac{9}{a}\right) \div \left(1 - \frac{a}{3}\right)$.

c Evaluate $\left(a - \frac{9}{a}\right) \div \left(1 - \frac{a}{3}\right)$ for:

i $a = 1$

ii $a = 3$

iii $a = 5$

1 a -2 b 4 c $\frac{1}{3}$ d $-\frac{13}{11}$

2 a $\frac{2t}{3}$ b $\frac{8}{3}$ c $\frac{x}{3}$ d $\frac{2}{x+2}$

3 a $\frac{2}{x-3}$ b $\frac{x+2}{x}$ c $\frac{3x}{3x+1}$

4 a -2 b $-\frac{5}{x}$ c $-\frac{x+4}{2}$

5 a $\frac{a}{3}$ b $\frac{3a}{b^2}$ c $\frac{3a+b^2}{3b}$ d $\frac{3a-b^2}{3b}$

6 a $\frac{21}{x}$ b $\frac{t}{24}$ 7 d $\frac{3}{2n}$ b $\frac{7x}{3(x+5)}$

8 a $\frac{11x}{12}$ b $\frac{14+x}{7}$ c $\frac{x-4}{4}$ d $\frac{5x}{12}$

9 a $\frac{7x-3}{12}$ b $\frac{3x+2}{6}$ c $\frac{3x+3}{10}$

10 a $\frac{3x}{(x+1)(x-2)}$ b $\frac{x+9}{(x-1)(x+1)}$ c $\frac{x^2+x+1}{x^2(x+1)}$

11 $x = 6$

12 a i $\frac{a^2-9}{a}$ ii $\frac{3-a}{3}$ b $-\frac{3(a+3)}{a}$
c i -12 ii undefined iii $-\frac{24}{5}$